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UNIVERSITY OF TORONTO

REPORT OF THE DEAN OF THE FACULTY OF MEDICINE

SESSION 1931-1932

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FACULTY OF MEDICINE

Toronto, June 30, 1932.

To the Graduates in Medicine of the University of Toronto:

For several years past the annual report of the Dean of the Faculty of Medicine has been sent to all graduates in Medicine of the University of Toronto. With the thought that the activities of the various departments constituting the Faculty of Medicine is of interest to our graduates the practice is being continued. Comments upon this report from any graduate will, of course, be welcome.

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UNIVERSITY OF TORONTO

REPORT OF THE DEAN OF THE FACULTY OF MEDICINE, SESSION 1931-1932

With the completion of the present session the term of office of Sir Robert Falconer as President of the University expires. During the past twenty-five years the Faculty of Medicine as a whole and its many individual members have enjoyed the very great privilege of his wise guidance, counsel and support. At this time it is with the deepest appreciation that acknowledgment of this is here recorded. The President-Elect, Doctor H. J. Cody, has had for many years, as Chairman of the Board of Governors, a deep interest in and sympathetic understanding of the responsibilities and problems of the Faculty of Medicine in the spheres of research, teaching and community service. This faculty, therefore, looks forward with confidence to the future, feeling assured that under the prospective administration continued encouragement and support will be accorded recommendations which have as their sole purpose the public good.

After a period of service extending over more than forty years, Doctor Alexander Primrose retired as Dean of the Faculty of Medicine on December 31, 1931. At the same time he gave up his professorship in Clinical Surgery. The sentiments of his colleagues upon the occasion of Doctor Primrose's withdrawal were expressed in the following resolution unanimously adopted by the Council of the Faculty of Medicine: "That upon the occasion of the retirement of Professor Alexander Primrose from the office of Dean of the Faculty of Medicine and from his Professorship in Clinical Surgery, we, his colleagues and associates in the Faculty of Medicine, wish at this time to indicate and record our warm affection for him personally, our appreciation of the services which he has for so many years rendered the University and

this Faculty especially, and our regret that the time for his withdrawal from active participation in the work of the Faculty has arrived."

Dr. J. G. FitzGerald, Professor of Hygiene and Preventive Medicine and Director of the School of Hygiene and the Connaught Laboratories, was appointed, by the Governors, Dean for a period of three years. Dr. E. Stanley Ryerson, who since 1908 has splendidly served first as Assistant Secretary and then as Secretary, was appointed Assistant Dean and continues as Secretary of the Faculty also. These appointments became effective January first, 1932.

Dr. J. T. Fotheringham, who has occupied the chair of the History of Medicine with distinction, retired at the close of the session. In many capacities Dr. Fotheringham has given unstinted devotion to the welfare of this University and his colleagues will miss his wise and helpful counsel.

It is with deep regret that the deaths of Dr. J. Algernon Temple, Professor Emeritus of Obstetrics and Gynaecology and Dr. Leonard M. Murray, a former member of the Department of Medicine, are here recorded. To an earlier generation of students and graduates Dr. Temple's capacity as a teacher was often made manifest and a large circle of friends and admirers mourn his passing. The death of Dr. Murray, a splendid teacher and most lovable man, has occasioned poignant sorrow to a wide circle of friends. The death of Dr. E. St. G. Baldwin, the last of Lister's former house officers resident in this community, must this year be chronicled. A scholarly physician, he possessed those fine characteristics of the great Edinburgh school of which he was a distinguished graduate. His passing still further reduces the ranks of those who assisted in the dissemination of the gospel of asepsis.

In addition to the resignations of Dr. A. Primrose and Dr. J. T. Fotheringham, the Faculty of Medicine has lost the services of Dr. M. H. V. Cameron, Assistant Professor of Surgery; Dr. G. C. Cameron, Associate Professor in the Department of Medical Research, and Dr. Ross A. Jamieson, Senior Demonstrator in the Department of Medicine. Upon the occasion of the resignation of these three members of the

staff, who for many years have rendered fine service to the University, their colleagues expressed their real regret and their sincere appreciation of their loyal co-operation at all times in the conduct of the work of the Faculty.

The following appointments and promotions have been made during the year:—

Professors

History of Medicine Dr. J. H. Elliott
Biochemistry Dr. H. D. Kay
Neuropathology Dr. E. A. Linell
Physiology Dr. Norman B. Taylor

Associate Professor

Hygiene and Preventive Medicine . . Dr. P. J. Moloney

Assistant Professors

Pathology Major George Shanks
Hygiene and Epidemiology Dr. Neil E. McKinnon

Associate Directors of the Connaught

Laboratories Dr. D. T. Fraser
Dr. C. H. Best.

Dr. E. S. Ryerson has been appointed by the Senate as the representative of the University on the Medical Council of Canada to succeed Dr. A. Primrose, resigned. Dr. Ryerson has also been appointed a representative of the Faculty upon the Senate.

During the year the following members of the Faculty were appointed to or continued to serve in the following offices:—

Dr. A. Primrose—President of the Canadian Medical Association.

Dr. W. E. Gallie—President of the American Orthopaedic Association.

Dr. E. S. Ryerson—Chairman, Committee on Education Policies of the Association of American Medical Colleges; Chairman, Committee on Medical Education of the Canadian Medical Association.

During the session the following members of the staff attended meetings as representatives of the University:

Dr. E. S. Ryerson—Association of American Medical Colleges at New Orleans; Congress on Medical Education, etc., of the American Medical Association at Chicago.

Dr. A. Primrose—Medical Council of Canada.

Dr. V. E. Henderson—Centenary Meeting of the British Medical Association.

Dr. C. H. Best—Celebration of Medical Progress at the University of Pennsylvania.

REPORT ON COUNCIL OF FACULTY

The entrance requirements into the Medical Course were made the same as those necessary to enter an Honour Science Course in the Faculty of Arts, so that after 1933, students at the secondary schools may defer their final decision as to whether they wish to take the Medical Course proper or the combined course in Arts and Medicine until after they have successfully completed their honour matriculation.

Immediately following the war, the number of students in the medical course became so great that limitation of those entering was considered, but as the entrance requirements had just been increased to honour matriculation, action was deferred until the effect of this higher standard of entrance on the number of students had been observed. In the last two years, the number entering the medical course again increased so that the Faculty Council considered steps should be taken to limit the number in the course. A very thorough investigation was made into this question, the various aspects of it being carefully studied.

Limitation of the number of students admitted into medicine is carried out in the majority of the universities in Canada and the United States. It has become necessary because a far larger number seek admission than the facilities of institutions can accommodate. The procedure is adopted both in state supported and privately endowed universities. Medical faculties have realized that there is an approximate relationship between the laboratory and hospital facilities of a medical college, the size and qualifications of the teaching staff and the

number of students that can receive an adequate medical education. The close personal contact between students and members of the teaching staff in the smaller medical colleges results in an efficiency which is not possible in an institution where the number of students is excessive. Five of the medical colleges in Canada and forty-four in the United States have a statement in their calendars that the number of students is limited.

The supply of graduates in medicine in relation to the needs of the Province of Ontario and the Dominion as a whole was calculated and the conclusion reached that a limitation of the number at this university would not in any way jeopardize the provision of an adequate number of physicians for the province or the country as a whole.

A study was made of the clinical facilities, the laboratory facilities and the teaching staff in relation to the number of students, for the purpose of ascertaining the approximate number that might be accommodated. It was found that in all the clinical departments a high standard of individual instruction was impossible with the present number and the relatively slow turn-over of patients available for teaching in the hospitals connected with the university. A reduction of the number of students in each bedside clinic group would be a distinct advantage to patient, instructor and student. With the present large number of students in the clinical years, the provision of adequate training is almost impossible on account of over-taxing the endurance of the patients by repeated examinations by individual students, as well as by repeated clinics in groups on the same patient. The present size of the classes prevents the close personal contact between student and teacher, which is so valuable as a method of instruction.

In the laboratory departments, the present large classes of students are out of proportion to the number of competent full-time instructors, making the provision of adequate instruction very difficult. As at present constituted, the teaching staffs of these departments have not sufficient instructors of the essentially necessary type to do proper justice to the training of the number of students enrolled. The laboratory

courses, which should provide the most important of the opportunities which the university offers, are already less efficient than they should be. This condition might be remedied by reducing the number of students.

From a thorough study of the facts, the Faculty of Medicine is convinced that the number of students admitted to the medical course should be limited to about 80. This, with the addition of about 20 students in Arts of the Biological and Medical Sciences course, and those admitted *ad eundem* from other provinces would yield about 100 students in each of the clinical years.

The method of limiting the students to the above numbers was given careful consideration. Experience has shown that the standing and marks obtained by students at matriculation do not form a satisfactory standard for the selection of medical students. A student may stand high at matriculation and fail hopelessly in his medical subjects or vice versa. On the other hand there is a very fair correlation between the marks obtained at the end of the first year of the medical course and the standing obtained in the remaining years. For this reason, the proposal has been made that students intending to enter medicine be enrolled in a pre-medical year in the Faculty of Medicine and that on the basis of the examinations at the end of the year, 80 students be accepted for registration in the medical course. It is further suggested that the number of students in each of the clinical years be restricted to approximately 100, including the graduates of the combined course in arts and medicine.

The above recommendations of the Faculty of Medicine await the approval of the Board of Governors before they can be made effective.

The creation of a division of neuropathology in the Department of Pathology and Bacteriology is referred to by Professor Klotz in his annual report. Dr. Eric Linell, formerly of the Department of Anatomy, was appointed to a professorship in neuropathology and has assumed his duties in this new and important extension of the work of this faculty. Furthermore, it has been arranged that the work being carried on by Dr.

Kenneth McKenzie in neurosurgery under Professor Gallie; the developments in neurology conducted by Dr. H. H. Hyland under Professor Duncan Graham; the activities of neuropathology in relation to psychiatry for which Dr. Hannah under Professor C. B. Farrar is responsible, shall all be co-ordinated by this group in laboratories designated for the purpose in the Banting Institute. This step has been planned for some time and results of great theoretical interest and practical importance should emerge therefrom.

A method for conducting a conjoint examination between the University and the Medical Council of Canada, whereby a student would receive his university degree and his licentiate of the Medical Council of Canada, was evolved and finally approved by the Faculty Council.

The method provided for the same men being appointed for the oral and clinical examinations in each of the subjects by the University and Medical Council, one of the two being a member of the teaching staff and the other an extra-mural examiner. The written papers would first be examined by men appointed by the University, and those of the candidates who were successful and received their degree, would then be examined by the main board of examiners of the Medical Council. Such a procedure as this would overcome the present necessity of candidates being subjected to two examinations within two or three weeks of one another and very often by the same examiners. The use of extra-mural examiners is common practice at universities in the old country and would require students to obtain a broader knowledge in the subjects of examination, an effect greatly to be desired. The details of the proposed method were approved by the Council of the Canadian Medical Association in Toronto in June and will be submitted to the Medical Council of Canada for consideration at their meeting in September.

The change in the representation of universities on the Council of the College of Physicians and Surgeons of Ontario, which will become effective as the result of the amendments to the Medical Act passed by the Legislature at its 1932 session, is a logical step in providing for one representative from each

of the universities conducting medical courses and granting degrees. The reduction in the size of this body from 29 to 15 is also commendable.

This year the Ontario Medical Association prize in preventive medicine was awarded for the first time. The recipient was Dr. Kenneth Brandon of the sixth year. The University is indebted to the association for the generous provision of this prize and the action is highly appreciated by this faculty.

Dr. Primrose, upon his retirement, most generously donated his splendid library of bound periodicals, monographs, books, etc., to the University. These have been placed in a special library in the Banting Institute. By this action, Dr. Primrose has still further placed this faculty in his debt. His gift is highly appreciated and thanks are once again tendered herein.

The Balfour lecture was delivered on Lister Day, April fifth, by Dr. Rudolf Matas of Tulane University, New Orleans. The title of the lecture was "The Story of Post-operative Pulmonary Embolism, before and after Lister". A large and appreciative audience was delighted both by the charming delivery of the lecturer and the very interesting subject matter of his address.

The Charles Mickle Fellowship, "awarded annually to that member of the medical profession who is considered by the Council of the Faculty of Medicine to have done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science", was this year awarded by the Senate to Professor G. Ramon of the Pasteur Institute, Paris. The recipient (an honorary doctor of science of this university), has made exceedingly important contributions to knowledge of infection and immunity in diphtheria. His most monumental recent contributions have been the development of diphtheria and tetanus anatoxine; specific prophylactics for diphtheria and tetanus respectively, and his discovery of the flocculation reaction.

DEPARTMENT OF ANATOMY

(Under the direction of Professor J. C. B. Grant)

There were working in the Department of Anatomy during the session 1931-32:

Medical Students	
Second Year	123
Third Year	127
Biology and Medicine	
Third Year	22
Fourth Year	8
Dental Students	37
Physiology and Biochemistry	2 (Histology)
Post Graduate Students	2 (Histology)

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Of these a number elected anatomical subjects as options, as follows:

Second Year—Cytology	10
Third Year—Anthropology	25
Fourth Year—Special Gross Anatomy	14
Fifth Year—Special Senses	6

Courses in Elementary Anatomy were given to 74 students of the Department of University Extension, as follows:

Occupational Therapy, first year	20
Occupational Therapy, second year	11
Physiotherapy, first year	12
Physiotherapy, second year	11
Graduate Nurses (Hospital Administration)	20

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A course of six lectures was given to thirteen optometrists.

The various lectures were duly delivered and practical classes conducted as prescribed in the calendar. Three examinations, both practical and written, were held for the junior students during the session, and two for the senior students. With the increase in the number of hours allotted

to the study of gross anatomy, a distinct improvement in the appreciation and knowledge of the subject gained by the student is evident; and it is believed that next year it will be possible to report a still further improvement. In the dissecting rooms each demonstrator had allotted to him and was responsible for the instruction given to a number of students. Each demonstrator conducted weekly or fortnightly a tutorial for his particular group of students. In order to assist in this and to ensure that some degree of uniformity should be obtained, a mimeographed set of suggested questions was provided for each demonstrator. Instruction in "The anatomy of the human body as related to the skin surface" was given to the junior classes which, for this purpose, were divided into five groups. Marked success attended this, and it is decided to develop it still further next year.

Equipment

The histology and embryology laboratories, which previously had depended entirely upon daylight as their source of illumination, have been wired and fitted with substage illumination and daylight glass. The workers at each of the 124 benches have now the great advantage of being able to conduct their microscopical work at any hour without regard to the fitfulness of the outside light.

A combined microprojector and lantern has been installed in the small lecture room in order to allow the lecturer to illustrate his remarks both with lantern and microscope slides.

The dissecting rooms, previously imperfectly lighted by reflected light, are now lighted artificially by direct diffused light, and as a result of this they are three times as bright as they previously were. For this we are greatly indebted to the superintendent and to the electrician.

The chart cupboard has been greatly enlarged, and new charts made on the premises already more than fill the new cupboard.

The department was able to increase, at very reasonable cost, its collection of primate material. Definite progress has been made in providing specimens for the anatomical museum

and it is decided to continue actively to build up a useful teaching anatomical museum. This involves, of course, a great deal of labour.

BANTING AND BEST DEPARTMENT OF MEDICAL RESEARCH

(Under the direction of Professor F. G. Banting)

Dr. F. G. Banting and Miss S. Gairns have continued the investigation of chickens immune to Rouse sarcoma.

Dr. F. G. Banting and Dr. D. A. Irwin made investigations on: (1) the reaction in host tissue to Rouse chicken sarcoma grafts, (2) the result of extirpation of small intestine of dogs. Dr. D. A. Irwin and Dr. J. H. Couch, of the Department of Surgery, carried on an experimental enquiry into the pathogenesis of pancreatic cysts. Dr. Irwin has investigated the pathological changes following the injection of colloidal thorium dioxide in animals.

Dr. E. J. King, with the assistance of Miss M. Dolan, investigated the enzymic hydrolysis of lecithin, including the study of the liberation of inorganic phosphate from several other naturally occurring phospho-lipins and derivatives of phospho-lipins.

Dr. W. R. Franks has continued a study into the nature of tumor glycolysis, which supplies the anaerobic energy of service to the invading tumor.

Dr. M. J. Thomson has been investigating the changes occurring in the thyroid glands of rats fed various synthetic diets.

Mr. E. Hall and Dr. John Ross, assisted by Miss M. Shaw, have conducted experiments on dehydration in dogs and puppies in relation to the enzyme content of the stools and the production of diarrhoea.

Dr. G. C. Cameron and Miss J. Lang have continued to investigate the deposition of silica in the tissues of rabbits following exposure to silica dust, or injection of silicates.

Dr. H. Stantial has worked out a satisfactory procedure for the estimation of silica in blood and urine. With Dr. E. J. King, she is investigating the elimination of silica from the body.

Mr. J. J. Rae has continued his study of glycerophosphoric acid.

Mr. H. Hull has continued experiments on the basal vitamin D requirement of the growing chick.

Mr. H. J. Perkin has been engaged in the preparation and purification of iodo-albumen and in the determination of the normal iodine content of the blood of rabbits.

Mr. E. L. Outhouse has investigated the presence of hexosemonophosphate in the white and dark muscle of chickens.

Professor C. C. Lucas, of Brandon College, working during the summer months under the auspices of the James Page Rutherford Fellowship, continued the investigation on the influence of pH on the titration of iodine-reducing substances.

Professor G. H. Ettinger, of Queen's University, working during the summer months, carried out the following investigations:

- (1) Effect of Janus green on smooth muscle in general, and on the muscle of blood vessels in particular.
- (2) Effect of pitressin on pulmonary circulation.
- (3) Histological investigation of the structure of the pulmonary artery in sheep, pig, ox and horse.

DEPARTMENT OF BIOCHEMISTRY

(Under the direction of Professor H. Wasteneys)

There has been no change in the organization of the department during the year, and the staff changes have involved only junior appointments. Messrs. McVicar and Johnston replaced Messrs. Branion and Krotkov; Mr. Pett has held a research fellowship during the year in zymology.

The number of graduate students in the department has been one more than last year—namely 32. Eight of these have graduated this month—three as Ph.D.'s, majoring in biochemistry, and five as M.A.'s. Fourteen graduate students have been doing research work under the direction of senior members of the staff. An account of these researches will be reported to the President.

The considerable amount of research work continues to be a severe tax on our accommodation and on departmental funds. We have again enjoyed the active co-operation of other departments in the University, and of the Ontario Agricultural College in these researches.

The total number of students registered in the department during the 1931-32 session was 338, an increase of 78 over the previous year. This number was made up of 124 medical students, 30 students in the B. & M. course, 6 chemistry, 2 P. & B., 4 Biology, 106 Household Science and Household Economics, 35 Dentistry and 32 graduate students.

Of the graduate students, 15 are candidates for the Ph.D. degree, 15 for the M.A., 2 are registered as graduate students, 6 are taking biochemistry as a minor for degrees in other departments, 5 are taking biochemistry as a prerequisite to other graduate courses, 5 students have taken work either as a major or minor in zymology.

All available accommodation designed for undergraduate students has been utilized this year, and as a considerable increase in the number of students is anticipated for the coming session we are faced with the problem of providing considerable additional accommodation. We anticipate an increased number of medical and arts students, and, in addition to these, we have agreed to accommodate in our laboratories a number of students—approximately 50—from the department of Household Science, who can no longer be accommodated for laboratory work in that department. We hope to be able to take care of this large increase by using alternative lockers in all the rooms, including laboratories used by advanced students, which are provided with them, and whenever possible giving the instruction during hours when the laboratories are not in use for medical and arts students. The department of Household Science are providing their own instructors so that the staff in biochemistry will not be called to perform this extra work. I need hardly say that this large increase in the number of students in the department will, nevertheless, involve considerable increased work for our staff, as well as considerable increased expense for apparatus and

supplies, and it will be more difficult than ever to give efficient instruction in the laboratory course. We accordingly look forward hopefully to the relief which may be afforded by the proposed reduction of registration in the medical and B. & M. students. I have several times referred to the difficulty, which will be greater than ever in the forthcoming session, of giving efficient laboratory instruction to so large a number of students with so small a staff. The proposed reduction in the number of students will make it possible to have a senior as well as a junior instructor in each laboratory, and under these conditions I anticipate a very great improvement.

DEPARTMENT OF HISTORY OF MEDICINE

(Under the direction of Professor J. H. Elliott)

The course of lectures laid down in the curriculum of last year was given. These were illustrated by lantern slides and by exhibits of books recording important contributions to the progress of medicine.

Invitations were accepted to give lectures outside the University, as follows:—

A. February 26, 1932, Osler Club, London, Ontario—
“Osler as I Knew Him”.

B. March 6, 1932, Harvey Club, London, Ontario—
“Books”.

C. March 7, 1932, Theta Kappa Psi, University of Michigan, Ann Arbor—“The Medieval Physician”.

D. March 23, 1932, Hurley Hospital, Flint, Michigan—
“Great Teachers in Medicine”.

E. May 18, 1932, Hamilton Academy of Medicine, Hamilton—“John Gilchrist, the First Medical Licentiate in Upper Canada”.

DEPARTMENT OF HYGIENE AND PREVENTIVE MEDICINE

(Under the direction of Professor J. G. FitzGerald)

Graduate students enrolled in the course leading to the diploma in public health, for the second successive year num-

bered sixteen. These large classes have consisted of students from the Provinces of British Columbia (1), Alberta (2), Saskatchewan (1), Manitoba (2), Ontario (2), and Quebec (8). The physical resources of the department have been taxed to the utmost to provide accommodation for this group of students, who spend about eight half-days weekly in the laboratories and class-rooms of the Hygiene Building.

The extension to the Hygiene Building, to which reference was made in the report for 1931-32, is now nearly completed and will, it is expected, be ready for occupancy in September next.

The usual courses of instruction in bacteriology, epidemiology, public health chemistry, vital statistics, physiological hygiene, serology, public health engineering, public health administration and history of medicine were given to graduate students fulfilling the requirements of the curriculum leading to the diploma in public health.

A larger registration of graduates proceeding to the degree of doctor of philosophy (undertaking majors or minors in the department) was recorded this year. These numbered six, of whom three satisfied the requirements and were awarded this degree. Students in the fifth year in medicine received the courses of instruction required by the curriculum, namely, a series of field and laboratory exercises occupying approximately thirty half-day periods, and in addition a course of didactic lectures. The practical work was given in May and June and in September. Laboratory and lecture courses were provided also for students enrolled in the courses conducted under the direction of the Department of Public Health Nursing. During the session there were developed new courses, laboratory and didactic, for graduate students from the Faculty of Applied Science and Engineering who are proceeding to the degree of Master of Applied Science. Lecture courses for students from the Faculty of Household Science and the Department of Social Science were also given.

This department is under a great obligation to members of the Department of Health, Ontario, the Department of Public Health, Toronto, and to many persons and organiza-

tions who have most generously assisted in, or afforded facilities for, the conduct of field work and practical exercises carried on extra-murally. Grateful appreciation of this assistance is hereby acknowledged.

The registration in the department for the session was as follows:

Graduate.....	27
Undergraduate.....	323
Nurses registered in diploma courses.....	43

The usual statement dealing with research activities and investigations undertaken by members of the department is included in the report of the Director of the Connaught Laboratories.

DEPARTMENT OF MEDICINE

(Under the direction of Professor Duncan Graham)

In the last annual report reference was made to the new quarters of the Department of Medicine in the Banting Institute. The increased facilities for laboratory and experimental animal work has resulted not only in an increase in the variety of problems under investigation but, most important, an increase in the number of members of the staff engaged in this work. Arrangements have been made for the combined study of neurological problems by the Departments of Pathology, Psychology, Surgery and Medicine.

At the beginning of last session, Dr. Ross Jamieson, senior demonstrator in medicine, resigned his appointment to accept the important post of cardiologist to Christie Street Hospital, a position made vacant by the lamented death of the late Dr. Leonard M. Murray, a former member of the Department of Medicine.

Dr. Hurst Brown, a former Rhodes scholar and a graduate in medicine of Oxford University, who has been a fellow in medicine and resident physician of the Toronto General Hospital for the past year, has been awarded the Radcliffe travelling fellowship from Oxford and will study abroad for two years. Dr. E. A. Keenleyside is the holder this year of

the Alexander McPhedran research fellowship in clinical medicine. Dr. W. J. Gardiner, a former fellow in medicine, has spent the past year in London studying the methods and application of physio-therapeutic measures in the treatment of disease. In the past year two of our graduates, Dr. E. F. Brooks and Dr. H. E. Rykert, after spending three years in graduate study here and abroad, joined the department as voluntary assistants, the former working in neurology, the latter on cardiovascular problems. Dr. A. A. Fletcher is a member of the American Committee for the Study of Rheumatism.

Investigation

The investigation of diseases of the liver and biliary tract is making definite progress.

Dr. Farquharson, with the assistance of Dr. Keenleyside, has continued his study on pigment metabolism and on the effects of iron and liver in the treatment of different forms of anaemia.

Dr. Falconer will publish shortly a report of his work on the capillary circulation in hyperthyroidism.

Dr. Warner's work on bronchiectasis has contributed a distinct advance to our knowledge of the cause of dilatation of the bronchi in this disease. This work will be published shortly. Dr. Warner and Dr. McGregor of the Department of Otolaryngology will publish shortly a report of their observations on the effect of radical antral surgery in cases of bronchitic asthma.

SUB-DEPARTMENT OF PEDIATRICS

It is of interest to note that the problems investigated in pediatrics are of interest not only to the hospital physicians, but also to the physicians in general practice, for example: it has been shown conclusively that the condition known as "acute intestinal intoxication", which accounted for no less than seventy-five deaths in the Hospital for Sick Children during the past year, is caused by dysentery types of bacteria, including the paratyphoid group. Before this work was completed the cause of this condition was unknown. As "acute intes-

tinal intoxication" is now rarely seen among the private patients of the medical staff of this hospital, it can readily be seen that it simply remains to educate the general public in order to practically eradicate this disease.

It is quite evident that further progress in the field of paediatrics, as in other branches of medicine, will depend on the close co-operation of the work in various fields of research. It is with great pleasure that we are able to report that not only is there very close co-operation among the workers in the laboratories themselves, but also arrangements have been made for closer co-operation with the Department of Physiology and the Banting and Best Department of Medical Research.

The funds necessary to maintain the research laboratories are still far in excess of the regular budget of the department, but we are glad to state that, through the efforts of the individual members of the department, we have been able to obtain the necessary funds for the coming year.

The laboratory staff consists of nineteen full-time workers—seven physicians, two bacteriologists, one research assistant in nutrition, three technicians, five laboratory assistants, and one secretary.

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

(Under the direction of Professor W. B. Hendry)

The work of the department has been carried out according to the curriculum.

The following investigations have been undertaken with satisfactory results:

1. A new obstetrical forceps has been devised by Doctor John Mann, which depends for its efficiency on a split universal joint. This forceps was exhibited at the last meeting of the American Gynaecological Society and met with a great deal of favourable criticism.

2. A new goniopelvimeter—an instrument for measuring the varying pelvic tilt during pregnancy, has been designed by Dr. James Goodwin and was exhibited before the American

Gynaecological Society, where it was commented upon very favourably.

3. Research work on the early and late toxaemias has been continued with the Department of Pathological Chemistry.

4. A study of the effects of pregnancy and the puerperium on the female ureter has been carried out in co-operation with the Departments of Urology and Radiology, the results of which will be published shortly.

DEPARTMENT OF OPHTHALMOLOGY

(Under the direction of Professor W. H. Lowry)

The students have been interested and attentive at the lectures and clinics and have passed their examinations with credit, some of them doing very well. Dr. MacDonald has done good work in the pathological department.

I feel that we ought to provide a number of ophthalmoscopes for the students so that they can always have one available for clinics, and, better still, for times when they are taking histories. I find the men who have purchased ophthalmoscopes are so much more interested than the others.

The members of the staff have been very faithful at the clinics and the junior members attend with me on consultation cases on the wards in the mornings. We have had about three hundred consultations during the session and it has been very interesting and instructive to all of us. I find that these consultations have stimulated the house surgeons to examine the eyes more thoroughly in all cases and as a result of this some of them have become very efficient in the diagnosis of diseases of the fundi.

The following is a report of the work in Ophthalmic Pathology for the year. During this period 89 specimens were received, which is an increase over any year since this work was started.

1924.....	24	1928.....	71
1925.....	64	1929.....	72
1926.....	78	1930.....	81
1927.....	65	1931.....	89

Practically all this work has been done in celloidin although in indicated cases paraffin sections were made to show cellular detail of a special area.

Our routine preparation takes about five or six weeks before the specimen can be reported. This is, I believe, unique, as much longer, often 3-6 months, are required in other clinics (Vienna, Chicago, etc.).

This work is only done in one other laboratory in Canada, where they receive about 50-60 specimens per year although the laboratory has been established for over thirty years.

As usual I prepared, examined, and reported the ophthalmic specimens for the Department of Health, so that we now officially receive specimens from all over Ontario. As this service becomes known, the nearly 100 specialists doing eye-work in the province will make more use of the department.

DEPARTMENT OF OTO-LARYNGOLOGY

(Under the direction of Professor P. G. Goldsmith)

The number of hours allotted in the calendar for didactic lectures in the final year is not sufficient to permit the subject to be satisfactorily covered. I have, therefore, given four or five more lectures and demonstrations, taking hours as do not conflict with the students' other arrangements.

No effort has been spared to prepare the student for the practice of general medicine and surgery in so far as otolaryngology is concerned. The students display marked interest and the lectures and clinics are not in any measure shirked.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY

(Under the direction of Professor Oskar Klotz)

The Department of Pathology and Bacteriology has continued its activities during the past year on the policy which has been discussed in previous reports. It has always been kept in mind that the duties of the department respecting

teaching, research and diagnosis must be clearly differentiated in the organization of the staff that the department may adequately carry out its responsibilities. In a staff where the demands upon the time fall very heavily in the divisions of teaching and routine diagnosis, the opportunities for some of the individuals proceeding with their research problems are none too easy. Nevertheless, it is found that the training which the staff itself acquires through its activities in these divisions keeps them alert in approaching their problems with a more direct vision. To a large extent the problems of research arise in studies upon materials which have been submitted for diagnostic purposes. Through this source both major and minor investigations are constantly being furthered by the members of the staff in the different divisions.

During the past year a new division of neuropathology has been allotted a place within the department, and although the room space now occupied by them is not that which was originally hoped to house the group, the division has been very active in furthering the interests of the clinical departments in neuropathology and in carrying out a type of work which has, heretofore, not been available to the Medical Faculty. By the attention to detail which is necessary to the study of neuropathology, it was rapidly shown that there is a wealth of material available both from the clinic and from the autopsy which will assist in a better understanding of many of the lesions of the nervous system. Dr. Eric Linell, who is in charge of this division, has brought together a very admirable collection of materials which have been worked over and classified for clinical interpretation. There are great possibilities for the future growth of this undertaking, and we feel that every support should be given to it. This division has also been helpful in improving the museum collection on neuro-pathology which has been of decided value in medical teaching. The co-ordinate interest of the Provincial Department of Health in establishing for its needs a laboratory for neuropathology has also been valuable. This laboratory is working in direct conjunction with the central group in neuropathology and the results of the studies made by them will

serve useful purposes in the Ontario hospitals. It is to be hoped that in the further development of the division of neuropathology opportunities for the training of junior men wishing to enter the specialty of clinical neurology will become available.

We regret the resignation of Dr. E. J. Clifford, lecturer in bacteriology, who for the past four years has been in charge of the diagnostic laboratory in bacteriology. Dr. Clifford was always very faithful to his duties, and during the term in which he held the position in bacteriology he gained the confidence of both the clinicians and laboratory group in his work. In his place there has been appointed Dr. P. H. Greey who has been lecturer in bacteriology and serology, and who has in the past devoted himself mainly to problems of research. The work in the diagnostic laboratory has been increasing from year to year, so that the time is not far remote when it will become necessary to add to the personnel who assume the responsibilities in this division.

Year by year attention is given to the improvements of the teaching facilities. In general the plan upon which the students' instruction is carried out is the same as we have previously indicated. Changes are, nevertheless, constantly being made in respect to the practical instruction and the topics of the exercises upon which greatest stress is laid. It is still felt that our greatest weakness lies in the presentation of the autopsy clinics, to which it is difficult to obtain students' attendance when they are at classes in other departments. It is not possible to have the autopsy clinics fall at specific hours so that they cannot be listed upon the time-table. There is, under the control of this department, an adequate number of autopsies, and the students should be encouraged at all times to visit the autopsy room and follow out their cases completely. In this we will require the co-operation of other departments that they may release the students more frequently from other exercises.

The Provincial Laboratory for Pathological Diagnosis, which is affiliated with this department and which is under

the charge of Dr. J. E. Bates, has increasingly shown its value to the practising physician in all parts of Ontario. This laboratory forms a link between the physician, the Department of Health and the University, which is so helpful to each concerned.

The value of the museum collection has been further proved in the teaching of undergraduate students during the past academic year. Continued and increasing demands are made upon the museum by many of the clinical departments and by the various divisions of our own department. This museum, which is numerically not large, has a feature of adaptability for teaching and contains well-prepared specimens which illustrate the points of interest very clearly. We continue to cull from the museum shelves specimens which are imperfect, and which do not show the lesion as clearly as is desired to present it to the medical student. The result is that new specimens appearing on the shelves continue to improve the present collection, while the unworthy specimens are eliminated. The feature, too, that the museum is divided into ten divisions, each of which is housed in a separate room, allows several classes to receive instruction at the same time. The museum has also served for some postgraduate teaching for individuals who are preparing for postgraduate examinations.

There have been a number of individuals who have carried out special researches under various auspices: the National Research Council of Canada has continued to support researches upon bovine and human tuberculosis; through a grant from the Banting Research Foundation special studies were undertaken upon arteriosclerosis arising in diabetes; and under the Ellen Mickle Fellowship a research upon the ability of the normal kidney to excrete bacteria was completed. The presence of these research workers amongst the other personnel of the laboratory has a very beneficial influence for the exchange of ideas. The department is anxious to further the opportunities of such researches in the future.

DEPARTMENT OF PATHOLOGICAL CHEMISTRY

(Under the direction of Professor V. J. Harding)

The teaching of the department has followed the lines of the last few years. In the fourth year laboratory a further effort has been made to link up the chemical tests with the clinical work. This has been attempted by means of mimeograph notes, showing more fully than before the direct applications of the tests, etc., in various diseases. In the fifth year, owing to last minute re-arrangements in the time-table, the lecture course was much subdivided. It is hoped that this defect is overcome in the coming session.

Dr. R. W. I. Urquhart has carried out a sound and interesting research on the prognostic value of the urea clearance test in surgical urological cases.

Dr. D. L. Selby has continued his researches on the physiological glycosurias. He has discovered the occurrence of "afternoon glycosuria" in a series of renal glycosurians and has established the practical possibility of carrying out glucose tolerance tests at times of the day other than the morning. Dr. A. R. Armstrong has been associated with this work.

Mr. G. A. Grant has continued his investigations on the utilisation of galactose. His methods of analysis have been refined and extended. Definite answer can now be given to several questions arising out of the metabolism of that sugar and the limits of its occurrence in man, after its oral administration has been determined.

Professor T. F. Nicholson has succeeded in devising a scheme of analysis for individual sugars in mixtures. It is now possible to analyse glucose, fructose, galactose, maltose, lactose and saccharose. This has been a most painstaking piece of work and reflects great credit on everyone concerned. Mr. G. A. Grant, Mr. G. Hern and Mr. C. E. Downs have been associated with this piece of work.

DEPARTMENT OF PHARMACOLOGY

(Under the direction of Professor V. E. Henderson)

The members of this department have found the students of the Fourth Year in Medicine less eager to work and with increasing desire for coaching, and less initiative in thinking out the results of their experimental work than for the past two or three years. We fear that the capacity of the students for independent study is steadily decreasing. They are willing to memorize, but not to think for themselves. I have been completely satisfied with the teaching efforts of the staff.

Research

The year has not been as productive as I would have liked, partly owing to some of the problems undertaken being long and involved, and the results of the work done will be apparent in the future. Dr. Lucas and myself completed an experimental study of Bancroft's revival of the precipitation theory of narcosis, and we were able to show conclusively that Bancroft had been misled in his experiments by lack of knowledge of anaesthesia. Dr. Lucas devoted a good deal of time, which I consider to great advantage, to the study of the absorption and medicinal use of iron. This study resulted in the preparation of a new form of ferrous chloride for iron therapy which is now being tried by the staff in medicine, with apparently satisfactory results. Dr. Roepke and myself have practically brought to a conclusion a study of the mechanism of salivary secretion, and have shown that the stimulation of the chorda produces a flow of saliva by the liberation of acetylcholine peripherally. This work extends that of Loewi and of Dale to gland structures, and the newer conceptions thus confirmed are likely to upset a great deal of our previous pharmacological thinking and teaching. Mr. Welch had made a certain amount of progress with the study on the action of apocodeine, when a paper appeared which made it inadvisable to continue the work. Dr. J. M. Scott, working under a grant from the Banting Research Foundation to Dr. D. R. Mitchell, has continued the study of urinary antiseptics, and I consider

that this work has thrown a definite light on their use and will be of clinical importance. I have completed the study of the afferent and efferent connections of the respiratory centre which will be reported at the International Physiological Congress.

DEPARTMENT OF PHYSIOLOGY

(Under the direction of Professor C. H. Best)

The teaching of physiology during the last academic year has been facilitated by the use of the new "Practical Physiology", which has been prepared by members of the staff of this department. A text-book on Elementary Physiology by Professor N. B. Taylor and the head of the department has also been completed. In the section of General Physiology, Dr. Laurence Irving's course is attracting an increasingly large number of graduate students in biology and biochemistry. In General Physiology provision has been made for advanced work by the better students. A new laboratory and lecture course in special senses has been planned and adopted this year. This course, under the supervision of Dr. Ruth C. Partridge, has been very satisfactory and can now be gradually improved without further reorganization. The Physiological Journal Club has been particularly well attended, and representatives from most of the departments of the medical faculty have participated in the discussions.

One of the most interesting research problems has been the physiological significance of a substance (or substances) which prevents deposition of liver fat in diabetic and normal animals. The problem has been studied continuously since July, 1927, in this department, but considerable impetus has been given to the work this year by the discovery that the deposition of liver fat in normal animals can be prevented by the use of the active substance. Evidence has been obtained that the active component of the substance is choline, and several investigations have already been initiated to investigate the physiological significance of choline in fat metabolism. Miss M. E. Huntsman, Dr. G. C. Ferguson, Mr. O. M. Solandt and Mr. J. M. Hershey have collaborated with the head of the

department in this research. Closely related problems have been investigated in collaboration with Dr. D. L. MacLean and Miss J. H. Ridout of the Department of Physiological Hygiene. The results of these studies in fat metabolism have already shed considerable light on several important problems.

Mr. Solandt, in collaboration with Miss Ridout, has re-investigated the length of the recovery period after muscular exercise, and considerable valuable information has been obtained on this important subject. In collaboration with Dr. Ferguson, Mr. Solandt has made a short study of the blood sugar in human subjects after strenuous exercise.

Studies upon calcium metabolism were continued this year by Professor N. B. Taylor and Dr. C. B. Weld, assisted by Messrs. W. R. Cameron and J. F. Sykes, the former a graduate student in biology and medicine, and the latter a graduate of the Ontario Agricultural College. Some interesting facts concerning the absorption of calcium and the action of irradiated ergosterol upon the excretion and absorption of this mineral have been obtained. Dr. Weld has divided his time about equally between the Hospital for Sick Children and this department. In association with Mr. Sykes, he has carried out a profitable investigation into the action of irradiated ergosterol upon the absorption of calcium in children. Mr. Cameron obtained material for his M.A. thesis from a series of determinations upon the total calcium content of the bodies of normal dogs and upon the effects of irradiated ergosterol upon the serum calcium in parathyroidectomized animals. Mr. Sykes has assisted in a series of experiments upon the action of bile in reference to the toxic effects of irradiated ergosterol. It has been found that animals in which a bile fistula has been made can not be brought under the influence of irradiated ergosterol administered orally. This observation opens up a very interesting field of investigation, but it is too early to offer any opinion regarding its significance. Investigations into the problems of intestinal obstruction have been continued this year, but a considerable amount of work in this field which had been planned could not be accomplished owing to other pressing work and the lack of the necessary assistance.

Arrangements have been made to provide means for continuing the work more energetically during the coming session.

The results of several years of work in the section of General Physiology indicated that it would be important to determine whether the carbonates in bones could participate in regulating the acid-base equilibrium of the body. The subject was investigated by feeding acid to rats and guinea-pigs, and subsequently analyzing the bones. It has been established that the carbonates of bone are partially expelled by the action of strong acid ingested with the food, and that the bones are subject to alteration with the acid-base balance of the body as a whole. The work was carried on by Dr. Irving in collaboration with Mr. A. L. Chute, who developed analytical methods suitable for the work, and who has executed the experiments and delicate analyses with exceptional ability.

In collaboration with Dr. M. J. Wilson, Dr. Irving has undertaken an investigation of the acid-base equilibrium in the gastric mucosa. The subject is important to pure physiology because of the remarkable acid secretion of the cells of the mucosa. It is also important in a practical way on account of the suggested relation between acidity and various prevalent gastric disorders. By determining the CO_2 content of the mucosa it was possible to show that the tissue maintains an approximately neutral reaction, in spite of its ability to secrete strong acid.

Postmortal changes in the mucosa were also examined, and it was found that acid is produced. The acid formed was not the regular secretion of strong acid, but probably represented the disintegration of the metabolic systems in the cells. It is hoped that the investigations will form the basis for a more penetrating search into the properties of this interesting and important tissue. The methods developed have opened promising new avenues of investigation.

In collaboration with Miss A. E. C. Riggs, Dr. Irving has investigated the process of postmortal lactic acid formation in mammalian skeletal muscle. It was known that acidity was a factor in limiting lactic acid formation and the performance

of work by frog's muscle. The experiments show that acid has a similar limiting effect on mammalian muscle and that the effect of hydrochloric acid is less than that of the lactic acid formed in the muscle itself. Miss Riggs also investigated the same process in heart muscle. The effect of acid is similar in some general ways, but quite distinct in certain details. The work on the heart is incomplete at present, but serves as an introduction to the problem of why heart muscle should be so much less resistant toward asphyxia than skeletal muscle.

Dr. Edward Fidler's previous work in gas analysis was interrupted when it was found that a slow but continuous contraction was proceeding in a sample of atmospheric air. The fundamental principle of measurement had to be examined. A similar change was encountered outside the gas apparatus, and certain experiments with air and other gas mixtures have, up to the present, given only a partial explanation of a technical nature.

Dr. Partridge has established the fact that the carotid sinus and cardiac depressor nerves conduct afferent impulses, and has recorded these impulses during various changes in blood pressure. It has been observed that a rise in the carotid blood pressure is accompanied by an increase in the frequency of the impulses in the carotid sinus and cardiac depressor nerves and by a fall in femoral blood pressure. On the other hand, a decrease in the carotid pressure coincides with a diminution in the frequency of the nerve impulses and an increase in the femoral blood pressure. This change in the frequency of the impulses in response to an altered carotid pressure seems to be the basis for the reflex control of the systemic blood pressure by the carotid sinus and arch of the aorta.

The study of the afferent impulses in the vagus and superior laryngeal nerves has been extended. The expanded lung has been shown to be the important factor in the initiation of the impulses in the pulmonary branch of the vagus nerve. The impulses appear to pass up the vagus nerve throughout inspiration in normal and forced respiration. This mechanism for the control of the respiratory rhythm is supple-

mented in forced respiration by impulses initiated by the movement of air through the air passages and transmitted by the superior laryngeal branch of the vagus nerve.

The method of extraction of insulin from pancreatic tissue, developed in this laboratory by Dr. C. M. Jephcott, has been adopted, and its applicability to quantitative determinations of the insulin content of such tissues has been amply confirmed by Dr. E. T. Waters, who was a member of the staff of the University of Wales before coming to Toronto. Previous attempts to recover added purified insulin from tissues by this process were only partially successful. A modification has been devised which permits a quantitative recovery of such additions of purified insulin. An explanation has been offered regarding the incomplete recovery by the above-mentioned process. Utilizing the above method of extraction an investigation has been conducted, in co-operation with Dr. D. W. G. Murray, of the Department of Surgery, on the effect of infection on the insulin content of the pancreas of dogs. A significant lowering of the insulin content of the pancreas has been found, the extent of the decrease depending on the severity of the infection. In collaboration with Dr. D. A. Scott and Dr. A. Charles of the Connaught Laboratories, Dr. Waters has studied the effect of certain derivatives of insulin administered orally to a normal and a depancreatized dog. In no instance was any physiological activity detected. No significant difference could be discerned in the insulin resistance of (1) mice fed on a high fat diet, containing no choline, and thus leading to fatty infiltration of the livers, and (2) those fed on the same diet, but supplied with sufficient choline to maintain apparently perfectly normal livers. Investigations have been conducted on the unusually high glycogen values found in the livers of rats receiving a diet high in fat.

DEPARTMENT OF PSYCHIATRY

(Under the direction of Professor C. B. Farrar)

The curriculum of required work in the fourth, fifth and sixth years has remained essentially unchanged in content, and

the number of allotted hours has been the same as in previous years.

Special attention has been given to the elective course in the fifth year. By a re-arrangement of work in other departments, Thursday afternoon was left entirely free so that the time of men enrolling for this course was not encroached upon. As a result twenty students attended the course throughout the year. Their time was divided principally between the in- and out-patient services at the Toronto Psychiatric Hospital where they were given opportunity to make individual case studies and to present them at the weekly conferences. By following single cases over periods of several weeks the students were able to familiarize themselves with the course and development of various forms of mental illness and with the effect of therapeutic procedures.

During the year a special postgraduate course was inaugurated for a limited number of physicians who became resident members of the hospital staff for the term of the course. During this year the course was limited to junior men in the Ontario Hospital service, nine being enrolled.

The Departments of Anatomy, Physiology, Pathology (Neuropathology), Neurology, Medicine, Pediatrics, Psychology and Ophthalmology participated in this course with the Department of Psychiatry.

Of special significance has been the development of an affiliate course in psychiatric nursing, in which selected nurses from the general hospitals in the city have come to the Psychiatric Hospital for periods of three months. Hospitals participating so far have been Toronto General Hospital, Toronto Western Hospital, Grace Hospital, Wellesley Hospital, Women's College Hospital. The number of affiliate nurses has necessarily been small and the course is being developed experimentally. From October 15th, 1931, to May 31st, 1932, seventeen nurses have satisfactorily completed a three months' course, and passed their examinations. In practically all cases nurses taking this course have been selected from among those voluntarily applying for it through their own superintendent of nurses; and the number of applicants

has greatly exceeded the necessary limit in numbers, although this can be extended somewhat in the future. This course has been planned not with a view to qualifying students as psychiatric nurses, but rather to stress the importance of mental hygiene and psychiatric principles and methods in the general nursing training course.

DEPARTMENT OF RADIOLOGY

(Under the direction of Doctor G. E. Richards)

No material changes in the work of the department have taken place during the year. The undergraduate teaching has been continued along the lines followed in previous years. In the postgraduate department one candidate completed the course and was granted the diploma in radiology. A number of additional enquiries regarding the course have been received, and it seems probable that with proper teaching facilities this course might be developed to be of considerable value in establishing and maintaining standards in radiological training and education heretofore almost entirely lacking in Canada.

Of developments in radiological methods, one of the most interesting has been the addition of yet one more to the ever-increasing list of opaque substances, by which the soft tissues of the body may be visualized and studied. This list began with the bismuth salts, later replaced by barium sulphate, and by these means the investigation of the alimentary tract was revolutionized. To these were added opaque solutions in the urological field, then lipiodol in the bronchial tree and other accessible hollow organs and, later, the phenolphthalein derivatives in the gall-bladder and air injections into the various cavities of the brain and spinal cord. The year just passed has added to these thorium dioxide under a variety of names (thorotrast, etc.). This drug is absorbed and retained by the reticulo-endothelial system, making it now possible for the first time to make satisfactory studies of the liver and spleen. Its possibilities bid fair to be far-reaching and somewhat spec-

tacular, *e.g.*, by its presence in the placenta the number of foetuses may be established (in rabbits) with great accuracy, and in the human this suggests possible uses in localising the number, position and form of the placenta, *e.g.* in placenta praevia, etc.

An interesting series of researches has been conducted by Dr. Dickson into the uses of this drug, not only to establish the usefulness, but also to determine the safety of its use in the human body. In these researches Dr. Dickson has received the valued assistance and co-operation of Dr. Irwin of the Department of Medical Research, which is most gratefully acknowledged. Various papers on this subject are in course of publication.

DEPARTMENT OF SURGERY

(Under the direction of Professor W. E. Gallie)

In the annual report for 1931-1932, I must refer with regret to the retirement of Professor Primrose from the Department of Surgery. As a bedside teacher and as a clinical and didactic lecturer he has had few equals in this University and his retirement has left a gap which it will take a long time to fill.

This year has seen the establishment in this school of a definite plan of postgraduate training for surgeons. Hitherto it has been impossible for a graduate to receive adequate training here in general surgery and he has been forced to seek it in hospitals abroad. With the support of the professors of medicine and pathology, however, and with the co-operation of the surgical staffs and the Boards of Trustees of the General and Children's Hospitals, it has been possible to provide a course extending over three years which it is hoped will place the teaching of surgery in this school on a high level.

In this plan the Toronto General Hospital offers to graduates of approved medical schools who have served one year as rotating interns in an approved hospital, or its equivalent in general practice, two appointments of three years' and one of two years' duration, which are arranged as follows:—

Three Years' Service

1. First Year—Six months medicine and six months pathology.
2. Second Year—One year as senior house surgeon on one of the general surgical divisions.
3. Third Year—One of the following options:
 - (a) Six months as house surgeon at the Hospital for Sick Children, and
Six months as house surgeon in the genito-urinary department at the General Hospital.
 - (b) Six months as house surgeon at the Hospital for Sick Children, and
Six months as house surgeon in the neuro-surgical department at the General Hospital.
 - (c) Six months as house surgeon in the neuro-surgical department at the General Hospital.

Two Years' Service

This service is open to applicants who have served what may be considered the equivalent of the first year of the three years' course in some other manner.

1. First Year—One year as senior house surgeon on one of the general surgical divisions.
2. Second Year—One of the three options described for the three-year course.

This plan has been in operation now for a full year and has worked well. It at once became very popular with our interns, seventeen of whom applied for the three appointments.

Two features of the plan should be referred to. First, these house surgeons are no longer treated as chance wayfarers through the wards of the hospital, but are accepted as apprentices to the art of surgery and are so treated by the attending staff. Second, when they accept their appointments they automatically enter the course for the postgraduate degree of master of surgery and they undertake to pursue the course of study in anatomy and physiology and in surgery and pathology required for that degree. During the past year these house surgeons spent two evenings a week in the dis-

secting room and one afternoon with an instructor in physiology, so that they will be prepared for the primary examination for the master's degree and the diploma of fellowship in the Royal College of Surgeons of Canada or England, as they may choose.

This outline shows that the plan is an attempt to combine adequate practical training with organized study and to make it possible for a graduate to receive a training here that will enable him to undertake, with a good prospect of success, a general surgical practice.

Undergraduate teaching has proceeded without much change.

In the Fourth Year, our experience of last year has led us to think that the amount of ground to be covered should be increased and this will be done next year. A plan of teaching applied surgical pathology to these students has also been evolved.

In the Fifth Year, the only change consisted in the establishment of a weekly class in applied pathology on fresh material obtained from the operating rooms.

In the Sixth Year, a weekly clinical conference has been established in which the results of surgical treatment are studied among groups of patients who have left hospital and returned to their homes. In this way, it is hoped to impress on students what late results may be expected from the surgical treatment of the patients they see in the wards.

During this year, Dr. Stuart D. Gordon and Dr. A. W. Farmer, who have been in England studying plastic surgery with Sir Harold Gillies, returned to Toronto and have taken up their duties in the General and Children's Hospitals respectively. They will be on a full-time basis as fellows in surgery.

The surgical laboratories in the Banting Institute have been in constant use during the year. Dr. D. R. Mitchell has completed his studies of urinary antiseptics and in conjunction with Dr. D. M. Scott has sent in two important papers for publication. Dr. R. I. Harris has continued his study of the effect of extirpation of the lumbar sympathetic cord on the growth of the lower extremities, in the hope that a satisfactory

method may be found of preventing the shortening which occurs in infantile paralysis. Dr. Gordon Murray has been experimenting with methods of anastomosing blood vessels and searching for ways of preventing post-operative thrombosis. Dr. Stuart Gordon has begun a study of duodenal ulcer and the surgical means of overcoming it.

The arrangement whereby five members of the Department of Surgery have been attached to the Department of Anatomy has proved highly satisfactory and will be continued.

DEPARTMENT OF THERAPEUTICS

(Under the direction of Professor R. D. Rudolph)

The work in the department was on the whole very satisfactory. The various members of the staff were regular in attendance, except that Dr. W. V. Watson was laid up for the first three months, but Dr. Cole and I took his classes so that the students did not miss any teaching.

The students rarely missed any of the lectures or clinics and have shown great interest in the work, which they realize bears so closely on their future career. All of them administered the required six anaesthetics and quite a number got many extra ones in outside hospitals.

Dr. Arthur G. Smith, research fellow, has been working, and is still working, on the important effects upon the blood of lowering high blood-pressure by various means. It has been held by some workers that such a lowering tends to cause retention of noxious products in the system, but from our results so far this does not seem to be the case. The subject is naturally of great therapeutic importance.

ART SERVICE

(Under the direction of Miss M. T. Wishart)

In September, 1931, the personell of the Art Service was increased by Miss Foster as artist assistant, and in October, 1931, by Miss Davy as secretary-technician. This has meant better organization, resulting in a steady increase in the output as well as the covering of a more extensive range of work, such as ophthalmology and moulages of fresh specimens.

The moulage work has evoked great interest from visitors, both English and American, with repeated requests for detailed information concerning our methods.

The convenience of the location in the Banting Institute is proving invaluable as it has resulted in far better co-operation by members of department utilizing the facilities of the Art Service.

Summary of Work of Art Service

1. According to medium of work	
1. Water-colour	16
2. Half-tone	16
3. Pen and ink	11
4. Models	11
5. Microscopic	3
6. Lettering	10
7. Line	19
8. Sketches	24
9. Retouching slides	4
	<hr/>
Total	114

2. According to departments	
1. Surgery	61
2. Medicine	11
3. Physiological hygiene	2
4. Physiology	4
5. Pathology, H.S.C.	5
6. Pathology, T.G.H.	1
7. Anatomy	10
8. Surgery, H.S.C.	11
9. Paediatrics	7
10. Gynaecology	1
11. Medical research	1
	<hr/>
Total	114

Number of members of Faculty for whom work was done . . 23

J. G. FITZGERALD,
Dean.

NOTES FROM THE ASSISTANT DEAN'S OFFICE

MEDALS, PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Awarded by the Senate of the University,
JUNE, 1932

The Charles Mickle Fellowship.....	Gaston Leon Ramon, D.V., D.Sc. (Tor.), Director of the Pasteur Institute Farm at Garches, France.
The Reeve Prize.....	J. L. McCollum, M.D., B.Sc. (Tor.).
The Alexander McPhedran Research Fellowship in Clinical Medicine.....	H. E. Rykert, M.D.
The James H. Richardson Fellowship in Anatomy.....	M. Appel
The Starr Gold Medal.....	G. L. Duff, M.A., M.D.
The Gold Medal.....	C. Aberhart
The Silver Medals.....	K. F. Brandon, J. K. W. Ferguson, M.A.
The Ellen Mickle Fellowship.....	T. H. Hodgson, M.A.
The Chappell Prize (in Medicine).....	C. Aberhart
The Ontario Medical Association Prize in Pre- ventive Medicine.....	K. F. Brandon
The David Dunlap Memorial Scholarship, Sixth Year.....	J. C. Richardson
The David Dunlap Memorial Scholarship, Fifth Year.....	W. J. Hendry, B.A.
The David Dunlap Memorial Scholarship, Third Year.....	Miss M. E. Cunningham
The Baptie Scholarship.....	H. V. Rice
The Robert Bruce Bursary.....	Miss J. A. McGeachy

OTHER AWARDS

No. 4. Canadian General Hospital Scholarships	W. J. Hendry J. W. Graham J. D. Hamilton } M. Lupovitch }
The John McCrae Memorial Scholarship.....	H. F. Saunders
Special Scholarship.....	J. L. Cathie

REGISTRATION OF STUDENTS IN THE FACULTY
OF MEDICINE

SESSION 1932-1933

	Men	Women	Total
First Year.....	153	17	170
Second Year.....	143	10	153
Third Year.....	135	9	144
Fourth Year.....	105	8	113
Fifth Year.....	104	12	116
Sixth Year.....	116	10	126
D.P.H.....	10	0	10
D.R.....	1	0	1
B.Sc. (Med.).....	1	0	1
Occasionals.....	4	0	4
Post Graduate.....	2	0	2
	<hr/> 774	<hr/> 66	<hr/> 840

REPORT OF THE MEDICAL SOCIETY

The school year of 1931-32 was a very successful one for the Undergraduate Medical Society of the University of Toronto. This was made possible by the untiring efforts of F. G. S. "Hank" Christie, President of the Society, and the excellent co-operation he received from his executive and the rest of the student body,

The Annual Medical At-Home was held in the Royal York on February 19th. Despite the prevailing financial condition, Earle Steele, Chairman of the At-Home Committee, and his executive obtained very satisfactory results. Gene Fogerty's orchestra played for the function, and pleased the large crowd in attendance so much that dancing was continued an hour after the scheduled time for the merriment to cease.

Daffydil Night, that annual medical fun night, was held in Hart House theatre on the evenings of March 17th and 18th. R. A. "Ash" Benson, as chairman of the committee, and his executive, spent many weary hours in seeing that all was in readiness. The results, however, were indeed very gratifying. The critics were unanimous in their decision that the Daffydil performance of this year was one of the best they had seen and that the manner in which it was presented was worthy of whole-hearted commendation. The banquet which inevitably

follows this function, was quite as successful as the performance, and those present forgot, for the time, all their recent trials and tribulations and thoroughly enjoyed themselves.

F. Burns Plewes, as editor-in-chief of the Medical Journal of the University of Toronto, certainly kept up and even improved the standard of our journal. He spent nearly all his time, not devoted to his academic work, in endeavouring to improve the journal and keep up the high standard set for him by his predecessors. At all times he was willing to co-operate with the executive of the Medical Society and many times his suggestions were extremely valuable. In his work he was ably assisted by a very excellent staff and through their combined efforts the journal has enjoyed a very successful year.

The annual election of officers for the Medical Society, Medical Athletic Society and year executives, was held in the Anatomy Building on February 26th. Over six hundred students voted during the afternoon and this large turnout in itself speaks well for the school spirit as it is called, claimed by so many to be dormant.

REPORT OF THE MEDICAL ATHLETIC ASSOCIATION

During the session 1931-32 the Executive consisted of:

Honorary President.....	Prof. V. E. Henderson
President.....	E. C. Steele
Vice-President.....	J. W. Sinclair
Secretary-Treasurer.....	M. A. Contway
Athletic Representative.....	3rd year—J. U. Coleman 2nd year—H. S. Doyle 1st year—J. D. Caldwell
Quartermaster.....	F. M. Scott

The undergraduates of the Faculty firmly observe the age-old motto of "A sound mind in a sound body" and endeavour to keep fit by indulgence in organized and unorganized athletics. Under the latter group may be mentioned squash, tennis, badminton, skating, skiing, riding and golf; while under organized athletics, *i.e.* those in which selected teams take part, we have a wide variety; rugby, soccer, lacrosse, track, B. W. & F., golf, tennis, harrier, hockey, water polo,

swimming, rowing, basketball and baseball, form the greatest openings for actual competition.

The Medical Athletic Association finances the purchase of uniforms and equipment from a one dollar compulsory fee paid to it by each undergraduate and, by careful budgetting, the various teams are enabled to take the field fairly well equipped.

During the past year, practically every undergraduate was engaged in some sport. The Intercollegiate teams, as always, have first call on medical athletes and the response has been splendid. Many stars and many consistent members of every intercollegiate team are registered in medicine. The Faculty may well boast the greatest number of "T" holders in the University.

Weakened by the loss of outstanding men to University teams, the remainder valiantly uphold the honour of the Faculty in interfaculty competition. As a general rule, a senior team from the upper three years and a junior team from the first three entered in each of the interfaculty meets with a total of about 175 men contesting. Approximately another fifty were active in intercollegiate competition.

During the past session, harrier, rifle, boxing and wrestling teams were successful in bringing championship cups to the Faculty, while the water polo and soccer teams were eliminated only in the finals. All other teams made very creditable showings.

Forty-two letter awards were made to members who had won their first "T" or an interfaculty championship or had completed three years of interfaculty or intercollegiate competition.

The women undergraduates, 70 in number, had their own organization, financed similarly to the men's. Teams were entered in interfaculty games and worthy results have been obtained. Many of the keenest players on intercollegiate teams were from our Faculty and several first "T's" were awarded to medettes this year. Approximately 30 girls have taken part in the interfaculty and intercollegiate meets and of these seven were awarded their medical letter.

